FUSIONFRAME® SPECIFICATIONS
FOR
WALK-IN COOLERS AND FREEZERS

The following information is intended to aid specification writers, architects, and food service consultants with projects that require prefabricated modular cold storage vaults.

GENERAL

Walk-in coolers and freezers to be constructed with prefabricated panels formed to the exact size as described below and manufactured by KPS Global - Fort Worth, Texas; Goodyear, AZ; Piney Flats, TN, Conyers, GA & San Dimas, CA.

INSULATION

Insulation shall be 100% rigid urethane. Urethane is to be poured in place with a density of 2.2 pounds per cubic foot. The temperature conductivity factor (K factor), overall coefficient of heat transfer (U factor) and the R value to b as follows:

THICKNESS	"U" FACTOR	"R" VALUE
3-1/2"	.036	25
4"	.032	32
5"	.025	40

FUSIONFRAME Panel System R-Value

Nominal Panel Thickness (in)	Wood Frame R-Value	INSULFRAME™ HDR Frame R-Value	FUSIONFRAME R-Value
20° Frame Mean Temp R-Value			
5	6.25	19.51	29.30
4	5.00	15.61	24.30
3½	4.38	13.66	21.99
55° Frame Mean Temp R-Value			
5	6.25	18.26	25.94
4	5.00	14.61	21.98
3½	4.38	12.79	19.33
75° Frame Mean Temp R-Value			
5	6.25	17.54	24.34
4	5.00	14.04	20.62
3½	4.38	12.28	18.11

FUSIONFRAME R-Value based on 5 lb. polyurethane foam insulation density.
FUSIONFRAME and HDR polyurethane foam R-Value determined by ASTM C518 Test Method.
Wood frame R-Value derived from published data.

Due to continuous improvement programs, specifications are subject to change without notice.

This insulation shall be a listed urethane with a rating of no more than 25 for flame spread and 450 for smoke developed per ASTM E84. This urethane will also meet the requirements of ASTM D-1929.

MODULAR PANEL CONSTRUCTION

All panels to be constructed with die-formed interior and exterior metal pans securely fastened to a tongue-and-grooved perimeter frame of Poly urethane structural members. Perimeter frame to feature tongue-and groove profile for positive alignment and sealing. Panel shall be filled with poured-in-place urethane, which securely bonds to metal pans and perimeter frame creating a rigid structural panel. Standard panels shall be interchangeable for ease of assembly. Special panels (if required) shall be manufactured to the size required to obtain a specified vault size.

PANEL FASTNERS

Cam-lock fasteners shall provide a tight and positive seal. Fasteners reduce on-the-job installation time to a minimum. Fastener material shall be steel housing, hook and pin with high-pressure die-cast zinc cam. Hardened steel hexagonal wrench is provided to tighten panel fasteners. The hook of the fastener shall engage over the pin when rotating the wrench and with cam-action, draw the panels tightly together. Polyethylene snap-in caps cover the wrench holes. Lock spacing shall not exceed 48" on center.

PANEL GASKETS

Each joint shall exhibit an extruded blown polyvinyl chloride (PVC) foam type; double lined compression gasket to eliminate water vapor permeability. All gaskets are factory installed and require no additional handling. Gaskets shall be resistant to chemical corrosion and ultraviolet radiation. Gasket operating temperature shall be -30 degrees F to +160 degrees F (-34 degrees C to +71 degrees C).

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Finishes

Interior and exterior metal pans are available in a variety of metal types and finishes including:

Aluminum Zinc Steel:
(1) Non-Painted Embossed 26 gauge
(2) White Embossed 26 gauge
(3) Black Embossed 26 gauge
(4) Tan Embossed 26 gauge.

Stainless Steel
(5) Stainless Steel type 304, 2B finish, 22 gauge

Aluminum:
(6) Non-Painted Embossed 0.040 inch
(7) White Embossed 0.040 inch

Other materials, special paint colors and smooth finishes for panels are available upon request.

Standard floor finish for NSF units is .050 Smooth Aluminum over 1/2" substrate.

Optional floor finishes are:
(1) .080 "Low Profile" Aluminum Tread Plate
(2) 22 GA. Smooth Stainless-steel type 304 #2B finish
(3) 18 GA. Smooth Natural Galvanized.
(4) 3/16" Aluminum Diamond Tread field installed over standard floor finish.

Item 4 is for high abuse applications. For pallet jack or forklift traffic, consult factory.

DOORS AND SECTIONS

Door and door panel to be of the same general construction and insulation as wall and ceiling panels. Door shall be of the inset type. Direction of swing to be specified. A heated vent shall be provided in or adjacent to all freezer door sections. Door to feature a polyvinyl chloride (PVC) bulb type, double lined magnetic steel core gasket on three sides for a positive seal. Door to have adjustable vinyl wiper gasket for seal at threshold. All gaskets to be easily replaceable and resistant to damage from oils, fats, water, and detergents. Doors can be provided in the following sizes:

| 34" X 78" | 36" x 78" | 42" X 84" | 48" X 84" |
| 54" X 84" | 60" X 96" | 72" X 108" | |

Other sizes are available upon request.

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HINGES

Shall be cam-rise hinge consisting of a pressure die cast strap and flange with a brushed satin surface chrome finish and carbon steel pin. Bearing to be composed of cam and follower made of self-lubricating nylon (Zytel).

LATCH

Shall be pressure die cast body with a brushed satin surface chrome finish. Latch to be provided with provision for padlock (padlock not provided). Latch to have recessed inside safety release to prevent entrapment.

DOOR CLOSER

A Kason 1094 Door Closer with slotted hook for ease of adjustment: Shall be of heavy-duty steel construction with hydraulic mechanism. Device automatically brings door to full closed position whenever door is ajar, within 10° of closed position.

DIAL THERMOMETER

Shall be flush mounted in door section. Dial thermometer to have 2" diameter face and a temperature range of -40° to +60° F. Finish to be polished chrome.

ANTI-CONDENSATE HEATERS

Freezer door sections are equipped at both sides and top with U.L. approved concealed fiberglass-silicone heater wires. A sill heater is located in bottom of door to avoid damage caused by loading at threshold plate, and to insure contra-ambient control by locating heat at the precise location of thermal transfer. A 12 ga SS threshold cover plate (sill) is supplied to cover the breaker strip running beneath the door. The heater wire is easily replaceable.

LIGHTING AND ELECTRICAL

Door section may be provided with a factory-installed LED light fixture on the interior of the section and a light switch with pilot light indicator flush-mounted within a chromed steel plate on the exterior. All wiring within the door section - heater, switch, and light fixture - is installed by KPS Global in conduit per the N.E.C. and requires only simple field connection by others for complete operation. All components to be U.L. approved. An electrical listing label will be applied to all prewired sections. Service required is 120 volt, 60 cycle, 1-phase.

Additional lights, and lighting packages for unit or site application are available.

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PARTITIONS

Common partition walls are available for dual temperature or multi-compartment walk-ins and are attached to adjacent wall panels by the use of cam action locks secured within special sections formed by those panels.

SCREEDS

A factory provided screed is available for units without prefabricated floor. Depending on application, the screed will be one of the following:

(1)   Concealed strip screed
(2)   PVC Channel
(3)   1-1/2" X 1-1/2" 18 ga. galvanized steel angle
(4)   1-1/2" X 2-1/2" 18 ga. galvanized steel angle

PVC channel and aluminum angle meet NSF requirements. An NSF approved coved base can be provided for other screed types.

ALTERNATE & OPTIONAL EQUIPMENT – KPS Global can provide an array of pertinent equipment to complete any project and provide a single source installation.

(1)   Heated Vent: Must be specified for all walk-in freezers operating at a temperature of 32 degrees F. or lower. A heated vent shall be provided to equalize the difference in exterior & interior pressure caused by sudden temperature changes due to opening doors, loading products, & the defrosting of coils. The heated vent shall be located above the freezer door (or located in a side panel, away from the direct air stream flowing from the evaporator). Electrical service required is 120 volt, 60 cycle, 1-phase.

(2)   Door Window: A 14" x 14" or 14" x 24" (viewing area) observation window can be provided in the cold storage doors. Window shall consist of three (3) panes of glass with sealed spaces between them & shall be removable for replacement. Windows may be provided with heaters if required. Electrical service required is 120 volt, 60 cycle, 1-phase.

(3)   Hinged Glass Display Doors: Each door shall be constructed of an extruded, polished aluminum frame and shall contain at least two (2) panes of glass. Low-temperature doors shall have built-in heaters to eliminate condensation.

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(4) Audio-Visual Alarm: Alarms can be provided for each compartment and shall work in the following manner: When the interior compartment temperature approaches the undesirable range, a digital readout display flashes & an audio alarm sounds. Electrical service required is 120 volt, 60 cycle, 1-phase.

(5) Large Dial Thermometer: Provide surface-mounted dial thermometers with a range of minus 40 degrees F. to plus 60 degrees F. The thermometers shall be 3 1/2" in diameter & chrome plated – typically mounted above openings.

(6) 4' LED Vapor Tight Linear Fixtures to be field installed to ceiling panels as requested. Electrical service required is 120 volt, 60 cycle, 1-phase. Installation & wiring shall be performed after the unit is installed. Additional lighting packages available.

(7) Locking Bar: Provide a stainless steel locking plated bar on each door to prevent entrance to the walk-in cooler/freezers even if hinges are removed. Provide bar with a safety release handle to prevent anyone from being locked inside.

(8) Strip Curtain: Reinforced polyester strip curtains shall be manufactured of clear extruded vinyl with rounded edges. The curtains shall be suitable for applications with temperatures as low as minus 20 degrees F. & shall be made for any of KPS's standard sizes of hinged or sliding cold storage doors.

(9) Ceiling Supports: All ceiling panels shall be supported in accordance with the manufacturer's recommendations and the Architect's approval. Various support systems are available including:
        (a) Interior steel (column supported)
        (b) Exterior steel (wall or column supported)
        (c) Wire or all thread suspension

(10) Soffit Closure Panels: Provide closure panels of materials matching the exposed exterior of the walk-in cooler/freezer for installation between the top of the insulated wall & the underside of the existing building finished ceiling (as indicated on the plans). Closure trim of matching material can be furnished wherever a space exists between the panels of the walk-in cooler/freezer and other building walls or columns.

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(11) Cantilever Shelving: Shelving shall be an adjustable cantilevered type furnished in the length, width, and number of tiers specified. All components to feature heavy gauge steel construction. Shelving is available in galvanized or stainless steel finishes. Construction will meet NSF standards when specified. Shelving to be of single piece construction and available in lengths up to 10'-0". Shelves are available in depths up to 30". Uprights shall be fabricated from two (2) 14 gauge, rolled steel channels, continuously seam welded. Brackets to be fabricated from 12-gauge steel.

(12) Free-Standing Modular Shelving with Posts: Shelving shall be an adjustable type furnished in the length, width, and number of tiers specified. All components to feature heavy gauge steel construction. Shelves shall be fabricated of bright basic carbon steel or stainless-steel rod. A rigid framework will extend around all four (4) sides and extend along the length of each shelf. At each corner of the shelf there shall be a tapered collar welded to the rigid framework. Each shelf shall have heavy gauge rods on 1" centers from front to back. Construction will meet NSF standards. There shall be a weld at every contact point between rods and between rods and rigid framework. Posts shall be made of 1" O.D. tubing and with a 16 gauge steel wall. Posts shall have grooves at 1" intervals for locating shelves. Posts to have a plastic cap at the top and a leveling bolt at the bottom. Shelving and posts are available in the following finishes: zinc and chrome plated, epoxy coated or stainless steel.

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COMPOSITE TESTING

KPS Global has product lines available that meet the requirements of the following:

- National Sanitation Foundation Standard #7
- Accepted by the United States Department of Agriculture
- Toxicity per UPITT Protocol
- Electrical application per U.L. 471, NFPA and CSA C22.2
- Flame spread and smoke developed per UL-723 (ASTM E-84), UL-1715, complying with Chapter 26 of all the National Building Codes
- Ignition properties per ASTM D-1929
- City of Houston-Houston Building Code
- City of New York-Material and Equipment Acceptance
- State of Oregon-Prefabricated
- State of California-Licensed Manufacturer
- State of Wisconsin-Material Approval

REGULATIONS AND CODES

All work and materials shall be in full accordance with local and/or state ordinances. KPS Global is not responsible for furnishing items required by the regulations, but not specified or shown on the drawings or contained in the specifications.

REFRIGERATION

A complete section of engineered refrigeration, from self-contained systems to remote components and accessories is available from KPS Global to satisfy exacting requirements - for indoor or outdoor application.

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WARRANTY

KPS Global guarantees purchaser the structural panels are free of defects in material and workmanship for a period of one (1) year from completion of original installation.

Electrical and Hardware components are warranted for a period of one (1) year from original installation.

Refrigeration systems carry the manufacturers normal one (1) year warranty and are available with various extended warranties.

With respect to products (doors, windows, etc., but not limited to) sold or supplied by KPS Global but manufactured by other companies who furnish their own warranties, KPS Global's sole obligation is to assist the original purchaser in contacting said manufacturer.

NOTE

For additional information on Fusion Frame or other quality panel systems contact:

KPS Global, LLC
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Fort Worth, Texas 76137
(800) 633-3426 - (817) 281-5121

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